Preliminary Advanced Colloids Experiment – for Biology (PACE-Bio)

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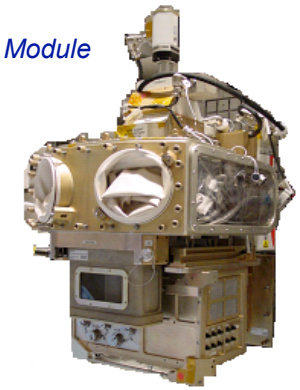
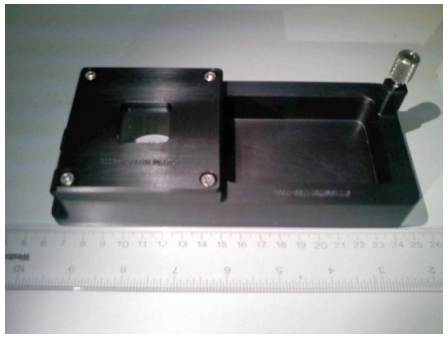
Light Microscopy Module (LMM)





PACE – B Sample Module

Objective:

- PACE-Bio: Sealed sample cell with practice/test particles and simple biological systems. Could be used to examine biological material found in ISS. LED light source and mount for trans-illumination.

Relevance/Impact:

- Testing biological containment design and trans-illumination.

Development Approach:

- The Preliminary Advanced Colloids Experiment will use the existing Light Microscopy Module (LMM) hardware in the Fluids Integrated Rack (FIR) aboard the International Space Station (ISS). Use existing LMM stage and PACE sample container.
- The LMM-Bio is designed for autonomous operation through scripts and ground-based commanding. Crew time is required for the initial installation and check out in the FIR, sample change out, and removal from the FIR.

ISS Resource Requirements

Accommodation (carrier)	Fluids Integrated Rack (FIR)
Upmass (kg) (w/o packing factor)	50 Kg for PACE-B / LMM
Volume (m^3) (w/o packing factor)	0.07 PACE-Bio / LMM
Power (kw) (peak)	0.5 kw for PACE-Bio / LMM 1.1 kw for FIR & ACE / LMM
Crew Time (hrs) (installation/operations)	35 Hours
Autonomous Operation	9 wks (3 sample sets at 3 wks/set) During 18 months of intermittent operations
Launch/Increment	2010 PACE-Bio/ ULF6 Middeck

Project Life Cycle Schedule

Milestones	SRR	Phase III Safety	FHA	Launch	Ops	Return	Final Report
Actual/ Baseline	Sept 2009	6/2010	6/2010	8/2010	Inc. 24-27	TBD	Jun 2011

Revision Date: 10/30/2008